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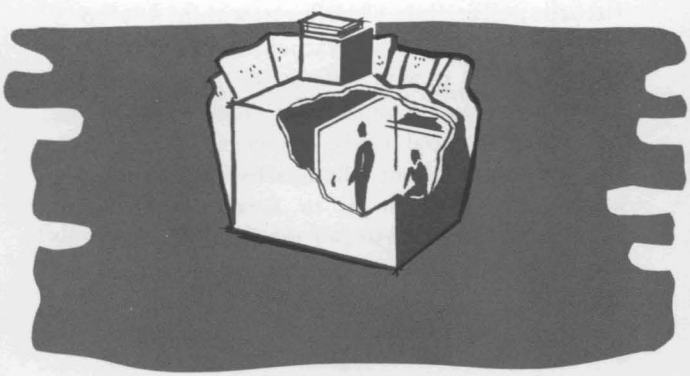
Tips on FAMILY SHELTER PLANNING



TEXAS A&M UNIVERSITY
TEXAS AGRICULTURAL EXTENSION SERVICE
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Tips on FAMILY SHELTER PLANNING

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This leaflet is designed for use with B-1017, Family Shelter Planning. Contact your local county agricultural agent or home demonstration agent for a copy of this publication.

NO ONE LIKES to contemplate the possibility of nuclear attack, but in these days of international tension, such a thing could happen. Government officials have been making civil defense preparations for years. In the event of an all-out attack, these officials say 85 to 90 percent of this nation's population could survive radioactive fallout if sheltered adequately. Such preparations also assure family protection in case of natural disaster.

WHAT IS FALLOUT?

When a nuclear weapon explodes, it forms a fireball pulverizing everything within a 3 to 5 mile radius. A resulting vacuum carries this debris upward, mixes it with radioactive materials of the bomb and forms a mushroom cloud. When the pulverized material cools, it comes back to earth and constitutes fallout. Radioactive fallout releases gamma radiation, similar to X-rays, which penetrates various thicknesses of material including the human body, but can be stopped by massive shielding.

Fatal Accumulated Dosage

Fifty percent of all individuals exposed to 450 roentgens* would become sick and die; 600 r. would be fatal to 99 percent of exposed individuals. However, small amounts of radiation, absorbed over a long time are less harmful than

*Roentgen: A unit for measuring radiation exposure.

a concentrated exposure, since body cells are rebuilding constantly.

PROTECTION AGAINST FALLOUT

Time

For every seven-fold increase in time, radioactive intensity decreases by a factor of 10. Example: if radiation measured 1,000 r/h at 1 hour after blast, 7 hours later it would measure 100 r/h; 49 hours later, only 10 r/h.

Distance

The further from the radiation source, the smaller amount of radiation received.

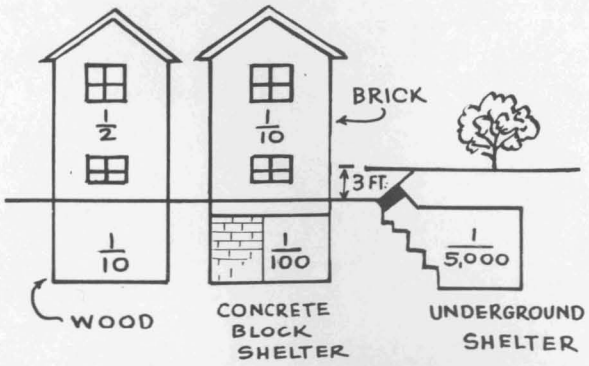
Shielding

The denser the shielding material, the more and better protection.

Material	Thickness necessary to reduce radiation to 1/100 Inches
Concrete	16
Soil	24
Wheat	48
Wood	60

The amount of protection offered by any structure is known as the Protection Factor (P/F). The P/F expresses how much less radiation a person would get in a protected place than if unprotected in the open. If a structure has a P/F of 100, it is 100 times safer than outdoors.

Example: Assume radiation measured 1,000 r/h—the frame house with a P/F of ½ would



Protection factor of common structures

cut radiation to 500 r/h. The accumulated dose 36 hours later would be approximately 1,300—still fatal. But, the improved, concrete-block basement shelter with a P/F of 1/100 would cut radiation to 10 r/h. Accumulated dose 35 hours later would be approximately 126 r/h.

Shelters obviously are necessary if the majority of the population is to survive nuclear attack.

COMMON FACTORS OF ALL SHELTERS

Shielding	Ventilation
Size	Lighting
Location	Drainage
Entrance	Radio reception

SHELTER ALTERNATIVES

Many factors determine the type shelter an individual family will need, such as nearness to an assumed target, available resources and family preferences.

Each family has the following alternatives when considering shelter protection:

Safest Area in the Home

- Center hallway or storage closet
- Add sandbags, concrete blocks, other material
- Prevent overloading of structure
- Minimum cost depending on material used

Basement as Fallout Shelter

- Build concrete block shelter in basement
- Select southwest corner for tornado protection
- Place support across top to: sustain debris load, reduce penetration of radiation
- Dual use as a photographic dark room, storage
- Cost about $100 to $300

Core Concept as Fallout Shelter

- Reinforce inner portion of house with 16" concrete or more

- Used in areas where fallout intensity may not be too high and where water table is too high
- Excellent when remodeling or building or adding shelter
- Used also as pantry or utility room

Underground Fallout Shelter

- Best protection
- Lessens danger from falling debris
- Cover with 16" concrete or 24" soil and concrete for 1/100 P/F
- Equip with proper entrance, ventilation, lighting
- Dual use as workshop, photographic darkroom, storage
- Cost about $800 to $1,200

Aboveground Fallout Shelter

- Necessary where water level is high, rock close to surface
- Construct of double walls of concrete block filled with soil
- Roof of concrete slab or earth filler combination
- Dual use as toolhouse, workshop, utility, storage
- Cost of $900 to $1,250

Fallout Shelter in New House Construction

- Planning flexibility at maximum
- Core concept, basement, under and aboveground shelters all applicable
- Other advantages—protection of landscape features, choice in sitting, protection of paved terraces and drives, neighboring buildings, built-in utilities and physical features
- Multipurpose — maximum possibilities at planning stage; guest bedroom, recreation,

play room, utility, storage, workshop, darkroom

Storm Cellar as Fallout Shelter

- Add baffled entrance, ventilation
- Stack sandbags over entrance
- Cover with 3 feet of earth
- If building, locate southwest of house for tornado protection
- Cost to convert—$100 to $200

Public, Community and Emergency Fallout Shelters

- Certain buildings marked and stocked by federal government
- Certain communities building shelters where families buy a share
- Some emergency protection provided by tunnels, mines, caves, culverts

SHELTER FURNISHINGS AND EQUIPMENT

Furnishings

- Bunk beds, cots or sleeping bags
- Folding chairs, stools or benches
- Hinged wall table or folding table
- Radio with batteries
- Storage closets and shelves

Equipment

- Lighting (electrical, lanterns, flashlight, hot-shot battery wired to bulb)
- Heating (mainly obtained by body heat in close quarters)
- Plumbing (in rural areas where water is supplied by windmill and overhead tank, water could be piped easily to shelter. If not, store water.)
- Sanitation (covered cans for garbage, small and large covered can for human waste lined with plastic bags)

Supplies

- Food
- Water
- Medical
- Tools
- Recreation
- Sanitation
- Miscellaneous

SHELTER ARRANGEMENT

- Should promote both physical comfort and high morale
- Provide housekeeping areas for food, preparation, storage, sanitation and sleeping
- Plan for maximum space and air circulation
- High morale obtained by painting walls and ceiling, by use of wall mirors and murals, floorcovering and mock curtains

FINANCING FALLOUT SHELTER

- FHA Title I Home Improvement Loan
- FHA Title II Loan
- VA loan
- Banks
- Credit unions
- Insurance policies

This leaflet contains suggestions only. Each family will have its own ideas and preferences for carrying out shelter plans and preparations. Emergency housekeeping would not be easy, but neither would it be too difficult if properly planned and arranged. One could not expect to live luxuriously under emergency conditions, but one could expect to live.

Cooperative Extension Work in Agriculture and Home Economics, Texas A&M University and United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8, 1914, as amended, and June 30, 1914.
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